Deviation of a Jet at a T junction at low Reynolds number PAS- 
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NIE COLIN, LOF/CNRS — We study the hydrodynamic behaviour of a laminar 
jet flowing through a channel when it reaches a junction. We observe the existence 
of two possible flow regimes, namely the splitting and deviation of a jet in the most 
simple microfluidic configuration, namely a T junction. The transition between the 
two regimes is not monitored by the shape of the T junction nor by capillary effects, 
but can be easily anticipated in terms of the hydrodynamic properties of the flow. 
We present a simple hydrodynamic model which is in very good agreement with 
observed experimental jet behaviour. The transition between both regime acts as a 
flow or viscosity comparator. We show how this effect can be used for the design of 
digital and integrated microfluidic devices

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